CLAIMS

1. A method for defining a common time base suitable for use in connection with the operation of a multi-link protocol analyzer in a multi-protocol communications system, the method comprising:

determining a clock frequency for each of a plurality of transmission protocols associated with the multi-protocol communications system; and

using the plurality of communications protocol clock frequencies as a basis for determining a frequency of a reference clock, where the reference clock frequency is different from each of the communications protocol clock frequencies.

2. The method as recited in claim 1, wherein using the plurality of communications protocol clock frequencies as a basis for determining a reference clock frequency comprises selecting a reference clock frequency that is an integer multiple of each of the plurality of communications protocol clock frequencies.

3. The method as recited in claim 1, wherein using the plurality of communications protocol clock frequencies as a basis for determining a reference clock frequency comprises selecting a reference clock frequency that is higher than any of the plurality of communications protocol clock frequencies.

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4. The method as recited in claim 1, wherein the plurality of communications protocols includes at least one of the following communications protocols: Infiniband; Gigabit Ethernet; SONET; Fibre Channel; and, PCI Express.

5. The method as recited in claim 1, further comprising using the reference clock as a basis to determine at least one of the following: a relative chronological order of selected data events concerning the multi-protocol communications system; and, relative timing of selected data events concerning the multi-protocol communications system.

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6. A method for processing data events associated with a multi-protocol communications system, the method comprising:

transmitting a reference clock having a frequency that is based upon a plurality of communications protocol clock frequencies associated with the multi-protocol communications system, the reference clock frequency being different from each of the communications protocol clock frequencies;

capturing a plurality of data events, the captured data events collectively representing a plurality of communications protocols; and

timestamping at least some of the captured data events, each timestamp being based upon the reference clock.

7. The method as recited in claim 6, wherein the reference clock frequency comprises a frequency that is an integer multiple of each of the plurality of communications protocol clock frequencies.

8. The method as recited in claim 6, wherein the reference clock frequency comprises a frequency that is higher than any of the plurality of communications protocol clock frequencies.

9. The method as recited in claim 6, wherein at least two of the plurality of communications protocols are unsynchronized with respect to each other.

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10. The method as recited in claim 6, wherein the plurality of communications protocols includes at least one of the following communications protocols: Infiniband; Gigabit Ethernet; SONET; Fibre Channel; and, PCI Express.

11. The method as recited in claim 6, wherein the timestamps are assigned to captured date events using clock boundaries of the reference clock.

12. The method as recited in claim 6, further comprising using the timestamps as a basis to determine at least one of the following: a relative chronological order of selected data events concerning the multi-protocol communications system; and, relative timing of selected data events concerning the multi-protocol communications system.

13. The method as recited in claim 6, further comprising receiving the reference clock.

14. The method as recited in claim 6, further comprising generating the reference clock.

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15. A protocol analyzer configured for use in connection with processing data events associated with a multi-protocol communications system, the protocol analyzer comprising:

a first link analyzer configured to receive data from a first communication link; and

a second link analyzer in at least indirect communication with the first link analyzer and configured to receive data from a second communication link, each of the first and second link analyzers also being configured to receive and transmit a trigger and a reference clock, and each of the first and second link analyzers further being configured to timestamp data in association with the reference clock.

16. The protocol analyzer as recited in claim 15, wherein at least one of the link analyzers is configured to generate the reference clock.

17. The protocol analyzer as recited in claim 15, wherein at least one of the link analyzers is configured to generate the trigger.

18. The protocol analyzer as recited in claim 15, wherein the reference clock has a frequency that is an integer multiple of each of a plurality of communications protocol clock frequencies associated with the multi-protocol communications system.

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19. The protocol analyzer as recited in claim 15, wherein the reference clock has a frequency that that is higher than each of a plurality of communications protocol clock frequencies associated with the multi-protocol communications system.

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20. In a multi-link protocol analyzer having a plurality of link analyzers that collectively represent a plurality of different communication protocols and corresponding clock frequencies, a method for processing data events associated with a multi-protocol communications system, the method comprising:

transmitting a reference clock having a frequency that is based upon the plurality of communications protocol clock frequencies associated with the plurality of link analyzers, the reference clock frequency being different from each of the communications protocol clock frequencies;

capturing a plurality of data events, the captured data events collectively representing a plurality of communications protocols; and

timestamping at least some of the captured data events, each timestamp being based upon the reference clock.

21. The method as recited in claim 20, wherein the reference clock frequency comprises a frequency that is an integer multiple of each of the plurality of communications protocol clock frequencies.

22. The method as recited in claim 20, wherein the reference clock frequency comprises a frequency that is higher than any of the plurality of communications protocol clock frequencies.

23. The method as recited in claim 20, wherein at least two of the plurality of communications protocols are unsynchronized with respect to each other.

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24. The method as recited in claim 20, wherein the plurality of communications protocols includes at least one of the following communications protocols: Infiniband; Gigabit Ethernet; SONET; Fibre Channel; and, PCI Express.

25. The method as recited in claim 20, wherein the timestamps are assigned to captured date events using clock boundaries of the reference clock.

26. The method as recited in claim 20, wherein the reference clock is transmitted by one of the link analyzers.

27. The method as recited in claim 20, further comprising using the timestamps as a basis to determine at least one of the following: a relative chronological order of selected data events concerning the multi-protocol communications system; and, relative timing of selected data events concerning the multi-protocol communications system.

28. The method as recited in claim 20, further comprising receiving the reference clock at a plurality of the link analyzers.

29. The method as recited in claim 20, further comprising generating the reference clock at one of the link analyzers.

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30. A computer program product for implementing a method for processing data events associated with a multi-protocol communications system, the computer program product comprising:

a computer readable medium carrying computer executable instructions for performing the method, wherein the method comprises:

capturing a plurality of data events, the captured data events collectively representing a plurality of communications protocols; and

timestamping at least some of the captured data events, each timestamp being based upon a reference clock having a frequency that is based upon a plurality of communications protocol clock frequencies.

31. The computer program product as recited in claim 30, wherein the reference clock frequency comprises a frequency that is an integer multiple of each of the plurality of communications protocol clock frequencies.

32. The computer program product as recited in claim 30, wherein the reference clock frequency comprises a frequency that is higher than any of the plurality of communications protocol clock frequencies.

33. The computer program product as recited in claim 30, wherein at least two of the plurality of communications protocols are unsynchronized with respect to each other.

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34. The computer program product as recited in claim 30, wherein the plurality of communications protocols includes at least one of the following communications protocols: Infiniband; Gigabit Ethernet; SONET; Fibre Channel; and, PCI Express.

35. The computer program product as recited in claim 30, wherein the timestamps are assigned to captured date events using clock boundaries of the reference clock.

36. The computer program product as recited in claim 30, wherein the data events captured in response the occurrence of a predetermined event.

37. The computer program product as recited in claim 30, wherein the method further comprises using the timestamps as a basis to determine at least one of the following: a relative chronological order of selected data events concerning the multi-protocol communications system; and, relative timing of selected data events concerning the multi-protocol communications system.

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38. The computer program product as recited in claim 30, wherein the method further comprises generating the reference clock.

39. The computer program product as recited in claim 30, wherein the method further comprises transmitting the reference clock.

40. The computer program product as recited in claim 30, wherein the method further comprises receiving the reference clock.

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